However, financial modeling systems require a great deal of data input and users become discouraged by the tediousness of the task. Furthermore, these systems tend to focus on the administrative aspects of financial planning without enabling the user to make reasoned choices about their financial futures. Also, these systems are limited by their inability to dynamically analyze the user 's financial goals. These limitations are counterproductive to the user's needs to develop and manage an integrated personal financial plan from an executive decision-making perspective.

Most existing financial management systems do little more than to allow users to electronically organize their financial assets and liabilities. These systems typically focus on presenting the user with a transactional summary of their financial health. However, these systems fail to capture the user's financial intentions and expectations about their future. Furthermore, these systems typically rely on the users to continually update their personal financial data. As a result, these systems are merely data-driven calculators that are incapable of providing the user with meaningful financial advice tailored to their financial intentions and expectations.

Similarly, some financial management systems present a static view of the user's financial health. These systems typically require the user to provide the most current financial data relating to their financial assets and liabilities. Consequently, when the user wishes to develop or update their financial plan, the user must input their most recent financial information. This problem is further exacerbated by the fact that these systems demand a lot of typing and guessing when the user enters their financial data. This process is time-consuming and inefficient and does not promote an intuitive understanding of how complex financial variables interact to produce a sensible financial plan.

Furthermore, most systems lack full interactivity. The user can only interact with the system. If there is need to communicate with a live advisor, he has to do so outside the confines of the system. Automated coaching beyond simple "how to use" menus are another important ingredient in making a financial system useful and flexible.

No system currently exists that combines the ease of use of an interactive and a dynamic graphical user interface with the abilities of a high power financial modeling system. In today's investment market, more and more users are acting as their own financial advisor. Therefore there is also a need for a financial system that combines a high power financial modeling tool

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with ease of use, context sensitive coaching, and interactivity with a live advisor, allowing the to assume an executive decision making role in managing their financial life.

SUMMARY OF INVENTION

The present invention relates to a graphical user interface operating within a financial modeling and management system. The system operates in a collaborative computing environment between the user and a financial advisor and comprises a model generating sub-system and financial coaching generating sub-system. In one embodiment of the present invention, a service level subsystem allows the user to negotiate a service level agreement that defines the user's optimal level of support and limits access to user provided information. The coaching generating subsystem is coupled to the service level subsystem and includes one or more coaching engines that dynamically analyze the financial needs of the user in accordance with the user's service level agreement. Furthermore, the coaching engine provides customized financial advice tailored to the user's life intentions.

In one embodiment of the present invention the system provides an intuitive graphical user interface (GUI) allowing the user to input his life intentions in terms of user revenue intentions and user expense intentions with the selection of intention icons. Both, during the setup of the model and during the use of the model, the user may contact a live advisor by selecting from a variety of communication icons. The present invention also provides interactive and dynamic windows for an automated coaching engine. The coaching window displays context sensitive coaching strings related to the user financial model and information.

In another embodiment of the present invention, the system provides a GUI within the context of a financial portfolio modeling framework. The GUI interface allows the user to input and analyze his financial portfolio, and compare its performance to user selected bench marks by selecting from various function icons and manipulate his portfolio using simple and intuitive function icons. The graphical user interface displays the results of the user's manipulations of the model in intuitive and simple to understand representation. The GUI further displays other model related characteristics to the user, allowing him to see the effect of his manipulations on various investment metrics.

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By providing the easy to use and intuitive Graphical User Interface of the present invention, the user quickly learns to interacts with the system and develop a trust essential to taking full advantage of the financial modeling system. Therefore, the user is able to take full advantage of all the benefits the system has to offer sooner. These and other advantages of the present invention will be apparent upon a study of the following descriptions and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects, aspects and advantages are better understood from the following detailed description of a preferred embodiment of the invention with reference to the drawings, in which:

Figure 1 illustrates a representative system architecture in accordance with a preferred embodiment;

Figure 2 is a block diagram of a financial management system;

Figure 3 is a block diagram of a representative hardware environment in accordance with a preferred embodiment;

Figure 4 is a block diagram of a financial management system;

Figure 5 is a flow diagram a financial management system;

Figure 6 is an illustration of a LifePath model web page interface;

Figure 7 is another illustration of a LifePath model web page interface;

Figure 8 is a flow diagram of the operation of an Investment Portfolio generator in accordance with a preferred embodiment;

Figure 9 is a flow diagram of how to build a computer generated portfolio;

Figure 10 is a flow diagram of how to model an existing portfolio;

Figure 11 is an illustration of an investment portfolio generator web page interface;

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Figure 1 is an illustration of one embodiment of a financial management information system, in accordance with the present invention, for providing personalized financial advice in a collaborative computing environment. In figure 1, financial management system 100 includes a financial coaching system 102 connected through a wide area network 104 to the live advisor terminal 106 a user terminal 110. The wide area network 104 is the Internet. The Internet is

based on the TCP/IP communication protocol first developed by the Department Of Defense in the 1960s. The present invention may be implemented using any other protocols and many other networking system, including wireless networks, the Network File Service (NFS) protocol used by Sun Microsystems or a Novel network based on the UDP/IPX protocol.

Preferably, the financial coaching system 102 communicates with the user through any number of devices such as handheld wireless personal organizers, pagers, cellular telephones, land telephones and regular desktop computers. All of the above equipment can act as a user terminal 110.

The user (e.g. individuals or company representative seeking financial advice) may access the system using a user terminal 110 (e.g. personal computer). A typical user computer terminal would be described in more detail in figure 3. The user computer is preferably equipped with software to receive live streaming video and/or still pictures over the wide area network 104, from the advisor video camera 108-B. Preferably, the user terminal 110 is further equipped with a video camera 108-A and software to transmit live streaming video from the user, across the network 104 to the live advisor at the advisor terminal 106. Access to the live financial advisor 106 and all other services provided by the Financial management system is controlled and channeled through the Financial Advisor system 102. The user can access the financial coaching system 102 through the Internet 104 or by telephone 109-A. A user telephone call is channeled through a call center discussed further subsequently in Figure 2 to the Financial Coaching System and to the live advisor 106.

The live advisor terminal 106 is preferably equipped with the video camera 108-B for transmitting live streaming video. The live advisor 106 may further communicate with the user via a telephone 109-B.

Figure 2 is a block diagram of an implementation of the financial advisor system 102. The user may access the system through the wide area network 104 connected to the Internet, and going through a firewall server 112. In a preferable implementation of the present invention, the wide area network is the Internet, an intranet, etc. A Web server 114 provides the user with a personalized website providing an interactive interface between the user, the financial advisor and financial management system 100. The financial coaching system 102 further comprises of a mail server 116, an application server 126, a call center 117 and a data server 128, all

interconnected through a local area network 113. The local area network (LAN) 113 may be any wide area intranet system or the internet.

Security is important in any financial system. The firewall server 112 controls the access to the financial advisor system. The purpose and functionality of a firewall server is to prevent access to the system by unauthorized users and it would be appreciated by one skilled in the arts. Firewall servers are available through a variety of vendors and have become a standard feature of any secure system used as the primary defense against intruders and hackers.

The web server 114 provides a personalized interactive web page environment for the user to operate in once he accesses the system. The web page is acting as the web interface between the financial system Web pages are created using the Hyper Text Markup Language (HTML),scripting languages such as Java Script™ or Pearl™ as well as Java ™ applets. Creation of customized web page using any of the above programming languages is well within the scope of one skilled in the arts. The personalized web page provides an environment and an interface for the user to interact with the financial advisor system 102. As an example, in one embodiment of the present invention, by selecting an appropriate icon from the interactive personalized website, the user is able to learn, plan, decide, transact and monitor his financial model.

The mail server 116 handles electronic mail communication between the user and the financial coaching system 102. The Mail server 116 may operate using any standard protocol such as Simple Mail Transfer Protocol (SMTP) and it is within the scope of the knowledge of one skilled in the art.

The application server 126 is where the various modules of the financial coaching system reside. The modules include the various coaching engines, the LifePath and the portfolio modeling sub-systems. The applications may be implemented in many programming languages, including the object oriented programming languages such as C++ or Java™ and be based on any platform such as UNIX™ , Apple OS ™ or Windows™ and NT™. Furthermore, the coaching engine rules for various coaching engine can reside on a data server 180.

Alternatively, the user may also interact with financial coaching system 102 through a telephone 124. The user's call is channeled through the call center system 117. The call center 117 includes an Automatic Call Distribution (ACD) server 122, an Interactive Voice Response Server (IVR) 124, a Computer Telephony Integration (CTI) server 118 and a RM workstation

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125, all interconnected through a Local Area Network or intranet 127. The local area network 113 may also be used in interconnecting the various servers of call center. When the user calls into the financial coaching system 102 using a remote telephone 124, the IVR sever 124 receives the user's telephone call. The IVR system greets callers, prompting them for identification, and providing some information automatically. The Automatic Call Distributor (ACD) server 122 distributes the call using the Internet Protocol (IP) over the network, to the appropriate live coach. The Computer Telephony integration server (CTI) 118 acts as the link between the live advisor's telephone call and the workstation based applications and allows them to automatically work together. As an example, when the IVR server 120 obtains some information about the calling user, this information is delivered to the live advisor's workstation 106, so the advisor does not have to request the same information again. Once the telephone call is properly routed to the live advisor, the user can user other means of communication such as electronic mail or white board ™ simultaneously while he is interacting with the live advisor.

The Data server 128 stores user input data and supplies the application Server 126. The data server 128 includes outside database sources from which the financial coaching system 102 can draw information such as actuarial data as well as historical price data on securities from sources such as Reuters, user financial information such as banking and portfolio information in other financial institutions, and market information such as the days closing numbers for various market indices as well as individual stock securities pricing information. Formatted in the Open File Exchange (OFX) format, now the accepted internet standard used by programs such as Quicken™ and MS Money ™ the data server through the firewall can easily exchange information with the outside world and specifically the user.

It should be noted that various computing platforms could be used to access the financial management system of the present invention. For example, a networked personal computer environment, a client-server system, a mainframe terminal environment, WEB TV terminal environment, dumb terminal environments can be used to access the financial management system of present invention. Depending upon the user's needs, a client-server system may be the most preferable computing system for implementing the financial system of the present invention. Furthermore, the representation of each server such as an application server or a data server, is a logical representation. The actual physical systems may be distributed over many servers, or be included on a single machine.

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Figure **3** is a computer system architecture that can be used in implementing the present invention. This computer system architecture can be used to implement a user workstation, or any of the servers called for in figure **2**. The present invention may be practiced on any of the personal computer platforms available in the market such as an IBM™ compatible personal computer, an Apple Macintosh™ computer, Solaris™ or UNIX™ based workstation. The operating system environment necessary to practice the present invention can be based on Windows™, NT™, UNIX™, Apple Operating System™, or open source operating system software such as Linux™ and Apache™. Furthermore, the computer system can support a number of processes. As appreciated by one skilled in the art, the processes may be written in any of the available programming languages including object oriented programming languages such as Java ™ or C++.

The computer system architecture depicted in figure **3** includes of a central processing unit **130**, such as a microprocessor, a read only memory (ROM) **136**, a random access memory (RAM) **134**, an input and output adapter **138**, a storage device **140**, and interface **142** connecting a plurality of input and output device such as a keyboard **144**, a mouse **146**, a speaker **148**, a microphone **150**, a video camera **152** and a display **158**, and a system bus interconnecting all the components together. The computer may also include such devices as a touch screen (not shown) connected to the bus **132** and communication adapter **154** such as a dial up modem, a Digital Subscriber Line (DSL) modem or a cable modem, for connecting the workstation to the Internet **104** . The storage device **140** can be any number of devices including but not limited to hard disk drive, a floppy drive, CD-ROM, DVD, a tape device, and removable magnetic storage devices such as a Jazz™ drive or ZIP™ drive. There are therefore a number of computer readable media encompassed by system depicted in figure **3**, including but not limited to RAM **134**, ROM **136**, storage device **140**, and storage accessible over the Internet **104**.

Figure **4** represents an illustration of the data flow of a financial coaching System **102** of the present invention. A user using for example the user computer **110**, preferably connects to the Financial coaching system **102** over the Internet **104**. After authentication by a firewall server, the user at a user terminal **110** enters the Financial coaching system **102** at the service level subsystem **160**. The service level agreement provides the level of services to which the user is entitled. Once the user has negotiated a service level agreement **161** , he is prompted to select the model to be used in operation **162**. In one embodiment of the present invention, the

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level of service and support selected in the service level agreement **160** controls the user's access to different modeling tools.

In a preferred embodiment of the present invention the LifePath model may be the hub of the financial institution's relationship. The LifePath model provides data to all coaching engines allowing customized coaching output to be dispensed to the user based on his unique financial situation. The LifePath model combines all the pertinent financial information about a user in one coherent and comprehensive picture and models the user's life intentions into an aggregated cash flow system over a user selected period of time. Using the terminal **110** the user inputs his life intentions in terms of projected income and expenses. The LifePath model **164** maintains an interactive dialog between the user and financial management system **100**. The LifePath model integrates the financial information available about the user in accordance with the user's service level agreement **160** to create an aggregate forecast of cash flow over the user's lifetime. The financial information available about the user includes the user's life intentions data **166** and the user's external financial data **168**. In a preferred embodiment of the present invention, the user's external financial data can include current checking account information from the user's bank or data related the user's retirement investment plan. By incorporating external data **168** into the LifePath model **164**, the system is capable of dynamically analyzing the financial needs of the user and providing the user with an understanding of their financial health at any point with minimal input form the user. As discussed above, personalized service level agreement **160** can optionally allow the user to limit the system's and/or advisor's access to the user's external financial data **168**.

Additionally, LifePath model **164** also integrates external market data **170** into the aggregated forecast of the user's cash flow. In one embodiment of the present invention, external market data **170** includes information such as current mortgage interest rates or market inflation rates. Access to both internal and external databases is controlled by the user's service level agreement. The LifePath modeling tool **164** is further discussed in a related U.S. application named the LifePath Counseling by the same inventors as the present invention, Application Serial No. 09/705,288, filed on the same day as the present application and incorporated herein by reference.

Alternatively, the user may by pass the LifePath model and start with a portfolio modeling tool **182**. The availability of the portfolio modeling tool is based on the user's service

level agreement **161**. The user would supply his financial portfolio information to the financial advising system **102**, either directly using the user terminal **110** or indirectly through the wide area network **104**, by accessing a multiplicity of databases **166, 168** and **170,** and accessing information such as his securities portfolio at a particular brokerage firm.

A financial portfolio modeling tool **182**, is an interactive tool that has access to the all the information available to the LifePath model **162**, such as the user's life intentions data **166**, the user's external financial data **168**, as well as external market data **170**. User insight data **167** and aggregated data from the LifePath model **165** is also available to the portfolio modeling tool. As a result the user has little to input and may start using the portfolio model **182** very quickly without the need to do a lot of tedious data input. The financial portfolio modeling also allows the user to access a computer coach and/or a live advisor based in part on the service level agreement.

An alternative embodiment allows the user to use the LifePath model **164** and set his long term financial goals and then use the portfolio modeling tool **182** to adjust his investment portfolio to better achieve his long term financial goals.

The LifePath interactive financial model may capture customer's intentions at the start of the relationship and displays them as lifetime cash flow requirements. Customer data and LifePath information combine to form a deep understanding of the customer's financial needs at each stage of life. Using dynamic, interactive multimedia, it quickly captures the customer's intentions and expectations about an ideal future. This flushes out some issues which trigger the initial discussions in the relationship. It also supports estimating the lifetime value of the customer and the appropriate levels of service. The data from this model combines with insight from product and transaction history as well as real time input from the abundance of interactive models to power rule-based coaching engines. This automated coaching leverages the advisor's time so that a broad customer based can be profitably supported. Configured using sliders and other interactive controls, there is little typing to slow the process down. The controls build a linear graphic representation of a life path which models predictable life transitions over time more effectively then data-driven calculators. Sales opportunities, lifetime customer value and appropriate fee structure are now more accurately identified.

Coaching generating subsystem **172** comprises one or more advice or coaching engines **174**. Coaching engine **174** dynamically analyzes the financial needs of the user in accordance

with the user's service level agreement. Furthermore, the coaching engine 174 is configured to operate with coaching engine rules repository 176. Coaching engine rules repository 176 is a collection of rules-based business logic that produces clear automated advice. Coaching engine rules repository 176 generates its advice using LifePath data 165 and user insight data 167. Alternatively the investment portfolio data from the portfolio modeling tool 182 triggers the coaching engines advise. In one embodiment of the invention, user insight data 167 includes transaction history, product or purchase history, as well as demographic information about the user.

In addition to providing coaching to the user, advice generating subsystem 172 also recommends product solutions to the user. As an example, in one embodiment of the present invention, the coaching engine 174 can recommend that the user include deposit products and loan products in their financial plan. For example, the coaching engine 174 can recommend that the user acquire a certain mortgage or bridge financing. Similarly, the coaching engine 174 can also direct the user to the need for financial products such as, home improvement, line of credit, or credit card products. Coaching engine 174 can also have access to product information from various financial institutions (not shown). Accordingly, the user can request additional information about the various products recommended by the system.

The user can access their financial plan or life path model using user terminal 110. User terminal 110 is part of collaborative computing environment 178 and is in data communication with virtual coach 180 and the advisor terminal 106 through the Internet 104.

The coaching and product solutions generated by the coaching generating subsystem 172 are presented to the user through virtual coach 180. Virtual coach 180 presents the product recommendation with accompanying rationale. The user may or may not wish to contact the dedicated financial advisor for additional coaching, advice or information. Because the system generates reasoned financial coaching in accordance with the user's financial needs and intentions, the financial advisor is able to operate more productively. Furthermore, the user can test different scenarios by altering the data captured by life path model 164. Each scenario can then be analyzed by coaching engine 174. The virtual coach 180 is further described in the related U.S. application named Automated Coaching For A Financial Modeling and Counseling System, Application Serial No. 09/705,255, by the same inventors as the present invention, filed on the same day as the present application and incorporated herein by reference. Furthermore,

the LifePath model is further described in the related patent titled A Financial Planning and Counseling System Projecting User Cash Flow, Application Serial No. 09/705,288, by the same inventors as the present invention, filed on the same day as the present invention and herein incorporated by reference.

In addition to virtual coach **180**, the user can optionally interact with a dedicated financial advisor **106** through communications network **104**. In an embodiment of the present invention, financial advisor **106** is located in a call center **118** on a relationship manager's workstation **125**. Financial advisor **106** may interact with user **110** using various multimedia interaction tools, for example, still-shot images or video streaming. Accordingly, the user is able to buttress the coaching received from virtual coach **180** with advice from a dedicated financial advisor operating at terminal **106**. In many situations, the live advisor's input may be necessary, since he brings a level of expertise and experience no automated coaching system may match. However, since the automated coaching has framed the problem for the user and the live advisor, both can immediately start analyzing alternative solutions in a focused and cost efficient fashion.

Depending on the level of service the user has negotiated with the service level agreement **161**, he may have a multiplicity of modeling tools available in the financial management system. In alternative embodiments of the present invention, modeling tools for analyzing various financial instruments such as bonds, reverse mortgages, option contracts and the like may be available to the user.

Figure **5** illustrates a flow diagram of an embodiment of the Financial coaching system **102**. The service level agreement process **160** may be one possible entry point for the user into the Financial coaching system **102**, where the user negotiates a service level agreement and sets the level of financial service desired. The service level agreement **161** defines the user's desired level of advisor support as well as limiting the system's access to user provided information.

After the service level agreement **182** has been negotiated, the user makes a first pass through the LifePath model **164**. Note operation **184**. In one embodiment of the present invention, the user may input its life intentions in terms of revenue intentions and expense intentions. The system then aggregates the information into a cash flow analysis over a user's income and expenses over a user defined period of time. The model may also include external data related to the user's finances. After a first pass through the LifePath model (process **184**), the system may estimate the probable customer profitability **186** based on the user's financial

plan given the user's life intentions and other financial information. If the user's service level agreement does not match the probable profitability **188**, the user can renegotiate the service level agreement negotiation or revisit LifePath model **184** to modify the model parameters, and then prompt the system to re-estimate the probable user profitability **184**.

After fine tuning the LifePath model **188**, context sensitive automated computer coaching **192** is provided to the user using a coaching engine based on business logic in a rule-based engine. The rules repository **176** supplies business rules. The automated coaching engine **174** may highlight for the user periods within his LifePath model which need special attention, such as a projected cash deficit or cash surplus. Based on the coaching from the automated coaching engine **174** and/or a live advisor, the user may accept or reject the LifePath model **194**. If the user rejects the LifePath model, he may further modify and fine tune the LifePath model **188** until he is satisfied.

In one embodiment of the present invention, the life path model process **196** is followed by an Executive activity process **198** where the system allows the user to assume an executive decision-making role in making their financial future. The executive activity process **198** enhances the user's ability to manage his or her financial life from an executive perspective. For example, through interaction with the system, the user learns **200**, plans **202**, or decides **204** the respective elements of their financial plan. Since the LifePath model **164** projects the user's cash flow in the future, the user may use the LifePath modeling tool **164** to change input variables such as savings, salary and expenses, and observe the long term effect of the changes on his financial goals. The intuitive graphical display of the LifePath model allows the user to get an immediate qualitative as well as quantitative feedback of the effects of the incremental changes on his long term goals. After engaging in these activities, the user may choose to seek accredited advice about purchase/sale of financial products based on coaching provided by the system . In an alternative embodiment of the present invention, the live advisor may recommend various financial products suitable to the user's financial situation after the user has used automated coaching to focus his investment goals. Furthermore, after initiating the transaction **206**, the user may monitor **208** and/or manage **210** the status of the products selected. In one embodiment of the present invention, the learn icon **200** allows the user to obtain information on the products recommended by the live advisor. The system may have to access outside databases to access third party products which may be beneficial to the user's financial situation. The rule based

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coaching further may check the governmental regulations and impacts of adding or deleting a specific product to the user's financial portfolio. The governmental regulations analyzed can include an analysis of the tax consequences of using a certain product specific to the user.

Figure 6 is an illustration of a LifePath model web page interface. The web page of figure 6 shows a customized web site and an intuitive user interface for the LifePath model subsystem. As previously discussed, the web site would be a personalized web site which a client uses to collaborate with a dedicated virtual (or live) financial advisor.

As depicted, the graphical user interface can include an advisor area 216, where images of the live advisor may be represented as still images, streaming video, or represented by a character. Selecting a link, such as the Contact Advisor link 218 shown, causes a connection to the advisor to be established. Preferably, the advisor and the user are able to communicate orally via network telephony of a type known in the art, but communication via email, chat, telephone call, or of any other type is acceptable as discussed in Figure 2. The communication interface between the user and the financial advisor system is further discussed in the related U.S. application named Communication Interface for a Financial Advising System by the same inventors as the present application, Application Serial No. 09/705,290, filed on the same day as the present invention and incorporated herein by reference.

The advisor uses the space to negotiate an initial Service Level Agreement (SLA), and begin the modeling of the customer's LifePath. This flushes out issues and permits an early estimate of customer value potential. The SLA nails down how much advisor time the customer wants, how information will be shared, and how much intentions-based advice the customer will welcome. The advisor configures the Web site in accordance with this agreement. The investment of effort in this, along with the personal online relationship begins to develop "stickiness" also defined as customer loyalty. Much of the communication presented by the system is generated by rule-based business logic. This is what leverages the advisors, extending their reach. It should be noted that the client negotiates a Service Level Agreement at the start of the relationship for desired level of advisor support and how the bank may or may not use their personal information. Website functionality can provide new levels of customer support even if customer wants low level of advisor interaction.

A link 220 may be provided that allows access to email. Other links can include a link 222 to personal memoranda, a link 224 to a links page, and a link 226 to a financial calendar. As

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an option, a calendar **228** and links **230** to news stories may be displayed on the page. In one embodiment of the present invention, the news can be customized by each user to fit his individual needs.

A virtual coach area **232** of the page can be provided to display the comments and advice created by the virtual coach. As described above, client data drives a rules-based " coaching engine" that dynamically analyzes customer needs and automates most of advisor's work. The client is encouraged to consolidate all their financial information in the site, recognizing assets and liabilities with other financial institutions. The virtual coaching area can be used both as customized coaching and as a platform to introduce various financial products, including third party products brokered by the financial institution owning the financial advisor system.

Upon selection of a button depicted along the bottom of the screen, a particular feature of the financial management system is displayed. For example, selecting the learn button **234** may bring up a portion of the screen (or a new screen) that discusses the functions and features of the financial management system. In an alternative embodiment, the learn button may be used to obtain specific information on the financial products presented to the user. The plan button **236** may display the LifePath model in time series form. A decide button **238** may display a screen that allows the user to make financial decisions, such as allowing a user to select transactions recommended by the advisor and/or the virtual coach. A transact button **240** may display a transaction screen on which the user performs transactions. A monitor button **242** may display current and/or historical information about transactions made by the user and/or financial performance.

The LifePath interactive financial model captures customer's intentions at the start of the relationship and displays them as lifetime cash flow requirements. Customer data and LifePath information combine to form a deep understanding of the customer's financial needs at each stage of life. Using dynamic, interactive multimedia, it quickly captures the customer's intentions and expectations about an ideal future. This flushes out some issues which trigger the initial discussions in the relationship. It also supports estimating the lifetime value of the customer and the appropriate levels of service. The data from this model combines with insight from product and transaction history as well as real time input from the abundance of interactive models to power rule-based coaching engines. This automated coaching leverages the advisor's time so that a broad customer based can be profitably supported. Configured using sliders and

other interactive controls, there is little typing to slow the process down. The controls build a linear graphic representation of a life path which models predictable life transitions over time more effectively then data-driven calculators. Sales opportunities, lifetime customer value and appropriate fee structure are now more accurately identified.

Risk analysis may be integrated into the LifePath model enabling clients to better understand their financial health and to improve trade-off decisions. Formulating a personal risk/reward strategy is difficult. The LifePath model supports a risk simulator, showing how the ideal model would be impacted by typical life crises. The model can be played repeatedly with varying outcomes to foster an intuitive understanding of exposure and to provide grounded input into trade-off decisions. Using the risk modeling tools, the advisor can add value, consolidate the relationship and rationalize a stream of product sales.

As shown in Figure 7, LifePath model 164 captures the user's life intentions expressed as revenue intentions 244 and expense intentions 246. As discussed above, revenue intentions 244 are a summary of the user's expense information 246. The user may be provided with an individual button for each of the income information categories 244. For example, the user may input their income information such as salary, investment, pension, alimony, or disability, or other financial information as shown in Figure 7. Similarly, the user can input their expense intentions which are shown by the category of interactive buttons 246. For example, the user can input expense information such as housing, transportation, education, health care, or other expense information as shown in Figure 7. Neither the income category nor the expense category is limited to the displayed icons. The "other" button under the revenue category enables the user to input user specific sources of revenue such as inheritance. Same flexibility applies to the expense category allowing the user to input types of expenses not categorized under the standard expense icons. The user may import his past revenue and expenses from financial programs such as Quicken™ or MS Money ™ simplifying reducing the amount of typing necessary to do so.

Additionally, the user can control the level of risk that the model considers by selecting one or more of the graphical user interface ("GUI") elements from the list of risk events 247. The risk events 247 include various life events that may affect the user's life path model. For example, the user can request that the model include job loss, disability, casualty, market downturn, or other personal risk factors into their life path model. In one embodiment of the

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present invention, the risk modeling component uses actuarial data from outside databases to supply the data related to the probability and the effect of the occurrence of a particular risk event. Alternatively, the user may estimate the impact of a particular risk event. For example a user may estimate the possibility of a job loss knowing his skill sets and the status of the job market. Furthermore, he can better predict the length of time he may be out of work. On the other hand automated coaching, based on actuarial and economic data, may estimate an average length of time a typical person in the user's field of expertise may remain out of work after a job loss. The user may accept or reject the automated coach's estimates and use his own information.

After providing the model with his or her life intentions expressed as revenue intentions 244 or expense intentions 246 in addition to any of the risk events, the user can select button 250 to run the life path model and initiate the advice generating subsystem. Accordingly, the user is provided with detailed advice in window 248 that is tailored to the user's life intentions and the risk events specified. As shown in window 248, the user is provided with a clear automated coaching tailored to his or her life intentions gathered by the life path model. Furthermore, the coaching incorporates the risk events specified from the risk factors 247. The graphical display 249 in figure 7 is a time series representation of the aggregated total of the user's cash flow over a selected period of time, based on the user provided revenue intentions 244 and expense intentions 246. Additionally, the system provides the user with virtual coaching that watches the actions of the user while progressing through the life path model and provides the user with suggestions to ensure that they continue to comply with his or her life intentions.

In another embodiment of the present invention, the financial advisor system 102 includes a portfolio modeling tool subsystem 182. The user would get to the model either after having setup a financial profile through the LifePath model 164 or he can access the financial portfolio building model directly.

Figure 8 illustrates an investment portfolio management method utilizing an automated coach in a network based financial framework in accordance with a preferred embodiment of the present invention. First, in operation 251, a plurality of parameters is set for a subject utilizing a network. The parameters include personal investment parameters 252, personal financial parameters 254, and/or asset mix parameters 256. Such parameters may include a minimum

retirement, target floor, investment rate, tax implications, etc. In operation, the parameters may be selected manually by the subject using a desired graphic user interface, or by a third party.

Next, the network may be utilized to provide the subject coaching from an investment coaching engine in operations **258**, where such coaching relates to the setting of the parameters. The coaching may be provided by utilizing a look-up table which is capable of generating various combinations of coaching based on the settings. In the alternative, the coaching may be generated using any other type of artificial intelligence system.

At least one financial model for a portfolio of the subject is subsequently generated in operation **260** based on the setting of the parameters. This may be generated using a system similar to that which generates the coaching, or any other desired means. The network is again used to provide coaching from the investment coach engine to the subject with the coaching relating to the generated financial model.

As shown in Figure **8**, the personal investment parameters include a risk tolerance parameter **262**. Further, the coaching by the coaching engine **264** may provide a textual risk tolerance profile for the subject based upon an interpretation of current risk tolerance parameters of the subject as textual analysis.

Further, the personal investment parameters may include an investment style parameter **266**. In such embodiment, the coaching by the coaching engine **268** provides a textual investment style profile for the subject based upon an interpretation of current investing style . parameters of the subject as textual analysis.

In yet another embodiment of the present invention, the personal investment parameters include a bull/bear attitude parameter **260**. A bull attitude is one of optimism that the stock market will go up, while a bear attitude is one where there is belief that the stock market will go down. In the present embodiment, coaching by the related coaching engine **262** provides a textual description of an implied future of financial markets and graphs showing forecast curves of financial markets based upon the building of financial market forecasts which are, in turn, based upon evaluations from financial experts.

In one embodiment, the coaching by the coaching engine **264** relating to the setting of the personal financial parameters in operation **252** provides an alert if the investment parameters of the subject conflict with LifePath cash flows or personal parameters based on a consistency

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